

In the Specification

Please amend the Specification as follows:

Page 10, line 24, replace "(to be determined)" with --08/060,663--.

Page 10, lines 26-27, delete "(Attorney Docket No. 1411.0200000)".

Page 10, line 29, replace "(to be determined)" with --08/037,451--.

Page 11, line 2, delete "(Attorney Docket No. 1411.0220000)".

Page 11, line 8, replace "300" with -204-.

Page 12, line 4, replace "310" with -216-.

In the Claims

Please amend claims 4, 8, and 12 as follows:

Claim 4, line 3, replace "said take-reel" with --said take-up reel--.

Claim 8, line 3, replace "said take-reel" with --said take-up reel--.

Claim 12, line 3, replace "said take-reel" with --said take-up reel--.

Remarks

Claims 1-12 are presented to the Examiner for reconsideration. Claims 1, 5, and 9 are independent claims. By the foregoing Amendment, claims 4, 8, and 12 have been amended. These changes are believed not to introduce new subject matter, and their entry is respectfully requested.

Based on the above Amendment and the following Remarks, Applicants respectfully request that the Examiner reconsider and withdraw all of the outstanding objections and rejections.

I. Objections to the Specification

The Examiner has objected to the Abstract under M.P.E.P. § 608.01(b) and the Specification on various formality issues. (See, Office Action, page 2, paragraphs 2-3).

Applicants submit that these objections have been either accommodated or rendered moot by the foregoing Amendment.

II. Rejections of Claims 2-12 under 35 U.S.C. § 112, Second Paragraph

The Examiner has rejected claims 2-12 under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. With respect to the rejection of claims 4, 8, and 12 for improper antecedent basis, Applicants submit that these rejections have been accommodated by the foregoing Amendment. (*See*, Office Action, page 3, paragraph 4).

Applicants, however, respectfully traverse the remaining § 112 rejections. The Examiner has alleged that the rejected claims are vague to their respective structures because they recite either "Panasonic Model D350", "Storage Technology Corporation Model 4400" and "4400 automated cartridge system", or "3480-style cartridge". The Examiner also alleges that these claims are indefinite because the recited "model[s] may change over time." (*See*, Office Action, pages 2-3, paragraph 4).

The claim phrase "Panasonic Model D350" is clearly defined in the Specification. The Panasonic D350 is commercially available, as it was prior to the filing of the present application. (*See*, Specification, page 5, lines 11-12). Moreover, the Specification memorializes the structure of the D350 helical deck, as of the time of filing, by explicitly incorporating by reference a "detailed technical discussion" of the D350. (*See*, Specification, page 11, lines 25-27). Accordingly, Applicants assert the structure of the "Panasonic Model D350" is clear and definite, thus enabling one skilled in the art to make or use the present invention.

Similarly, the structure of the "4400" automated cartridge system is definitively established by the three U.S. Patents commonly owned by Storage Technology Corporation, also incorporated by reference in the Specification. (*See*, Specification, page 8, lines 19-22). Throughout the Specification, both phrases "Storage Technology Corporation Model 4400" and "4400 automated cartridge system" refer to the automated cartridge systems disclosed in these U.S. Patents. (*See, e.g.*, Specification, page 2, lines 4-11).

Applicants also assert that the Specification provides a clear and definite structure for the phrase "3480-style cartridge". It is well settled that inventors may choose to be their own

lexicographers. *Intellicall, Inc. v. Phonometrics, Inc.*, 21 U.S.P.Q.2d 1383 (Fed. Cir. 1992). Applicants have defined "3480-style cartridge" to refer to the industry standard cartridge developed by IBM Corporation, as well as the *helical cartridge* used with the present invention. (*See*, Specification, page 1, lines 11-15; page 12, lines 25-27). In addition, the Specification expressly incorporates by reference the helical cartridge disclosed in the co-pending U.S. Patent Applicant, titled, "Magnetic Tape Cartridge for Helical Scan Transport". (*See*, Specification, page 12, lines 21-24).

Moreover, these phrases are not rendered indefinite merely because they incorporate trademarks or names used in trade. The use of trademarks and names used in trade are permissible in patent applications if "their meanings are established by an accompanying definition which is sufficiently precise and defined" or "their meanings [in this country] are well known and satisfactorily defined in literature." M.P.E.P. § 608.01(v)(emphasis added). Thus, the "sufficiency of disclosure must be decided on an individual case by case basis." M.P.E.P. § 608.01(v); *In re Metcalfe*, 161 U.S.P.Q. 789 (C.C.P.A. 1969); *In re Coleman*, 176 U.S.P.Q. 522 (C.C.P.A. 1973); *Ex parte DeCastro*, 28 U.S.P.Q.2d 1391 (Bd. Pat. App. 1993).

The *Metcalfe* court, held that the specification there provided either sufficient information itself about the material or means for obtaining such information, that was independent of the material's trademark, to enable one skilled in the art to use or make the invention. *Metcalfe*, therefore, concluded that the mere "possibility that at some future date ... [the recited trademarked product may change] is too speculative to justify a holding that a disclosure is insufficient under § 112, [second paragraph]". *In re Metcalfe*, 161 U.S.P.Q. at 793.

In view of § 608.01(v) and *Metcalfe*, Applicants submit that the Specification itself and the documents incorporated therein by reference provide ample information of the D350 and 4400 ACS, independent of the recited trademarks or names, to enable one skilled in the art to use or make the present invention. Thus, Applicants respectfully assert that § 112 rejections for indefiniteness are improper and request that the Examiner reconsider and withdraw the rejections.

III. Rejections of Claims 1-12 under 35 U.S.C. § 103

The Examiner has rejected claims 1-12 under 35 U.S.C. § 103 as being allegedly unpatentable over U.S. Patent No. 4,991,037 to Shimizu *et al.* (hereinafter "Shimizu *et al.*") in view of U.S. Patent No. 4,399,959 to Godsoe *et al.* (hereinafter "Godsoe *et al.*") and further in view of the three U.S. patents to Moy *et al.* (hereinafter, "Moy *et al.*") which were incorporated by reference in the Specification. Throughout the Office Action, the Examiner also refers to the "prior art as shown on *page 8*, lines 18-27" of the present application for the proposition that the use of a helical deck was known in the art. (*See*, Office Action, pages 5-7). It appears, however, that the Examiner intended to cite *page 11*. Thus, Applicants have addressed the rejections accordingly. The following remarks pertain to independent claims 1, 5, and 9, and correspondingly to claims 2-4, 6-8, and 10-12, which depend therefrom.

Shimizu *et al.* teach a conventional tape transport for use with a single reel cartridge and a longitudinal recording format. A pivoting arm mechanism (first and second driving arms 76,81) is used to pull a leader block 39 from a tape cartridge 14, across a magnetic head 44 and into a take-up reel 94. The tape loading path is basically an arc, which is easily followed by the pivoting arm mechanism.

Similarly, Godsoe *et al.* teach a tape transport for use with a single reel cartridge and a longitudinal recording format. However, rather than using a pivoting arm for tape loading, a constant force spring 48 is used to pull a leader block 18 through a relatively linear tape threading path across a magnetic head 32.

Neither Shimizu *et al.* or Godsoe *et al.* teach or suggest helical recording. As pointed out in the present application, helical recording will allow approximately a 100 times increase in storage capacity over the conventional 18 track longitudinal format. However, a helical tape transport for use with the data storage industry's standard single reel cartridge has yet to be commercialized. One possible reason for the lack of such a product is the enormous expense and effort required to develop the servo controls and read/write electronics to support a helical transport.

Applicants discovered that such a transport could be produced without the enormous expense and effort by leveraging the commercially available technology of the video industry. The video industry has been using a helical recording technology for many years. However,

as pointed out in the present application, the video transports are designed for use with a two-reel cartridge and have a form factor incompatible with many data storage environments (such as the 4400 Automated Cartridge System).

Applicants were able to integrate a helical video deck into a transport having a form factor compatible with the Storage Technology Corporation Model 4400 Automated Cartridge System and which accepts single reel tape cartridges. The structure and organization of the transport of the invention is recited in independent claims 1, 5 and 9.

All three of these claims recite a *helical scan transport* for reading and writing data on a removable *single reel tape cartridge* with a *substantially linear loading path*. The Examiner has cited no reference which teaches each of the claimed features. Rather, the Examiner is asserting that the invention is obvious in view of Shimizu *et al.*, Godsoe *et al.*, and the discussion in the application pertaining to the Panasonic D350 video tape recorder.

Prior to Applicants' invention, a helical tape transport having a form factor compatible with the Storage Technology Corporation Model 4400 Automated Cartridge System and which accepts single reel tape cartridges was not known in the computer data storage art.

It is settled law that "elements of separate prior patents [or publications] cannot be combined when there is no *suggestion* of such combination anywhere in those patents [or publications]...; and a court should avoid hindsight..." (emphasis added; annotations within square brackets). *Panduit Corp. v. Dennison Mfg. Co.*, 1 U.S.P.Q.2d 1593, 1597 (Fed. Cir. 1987) (quoting *ACS Hosp. Sys., Inc. v. Montefiore Hosp.*, 220 U.S.P.Q. 929, 933 (Fed. Cir. 1984)); *W.L. Gore & Assoc. v. Garlock, Inc.*, 220 U.S.P.Q. 303, 313 (Fed. Cir. 1983). See also, *Uniroyal Inc. v. Rudkin-Wiley Corp.*, 5 U.S.P.Q.2d 1434, 1438-1441 (Fed. Cir. 1988). Furthermore, the Court of Appeals for the Federal Circuit stated that:

[o]bviousness can not be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion or incentive supporting the combination.

In re Gorman, U.S.P.Q.2d 1885, 1888 (Fed. Cir. 1991) (citations omitted). The Examiner "cannot pick and choose among the individual elements of assorted prior art references to recreate the claimed invention." *Smithkline Diagnostics Inc. V. Helena Laboratories, Corp.*, 8 U.S.P.Q.2d 1468, 1475 (Fed. Cir. 1988). The Examiner "has the burden to show some teaching or suggestion in the references to support their use in the particular claimed

combination." *Id.* Moreover,

[a]s in all determinations under 35 U.S.C. §103, the decisionmaker must bring judgment to bear. It is impermissible, however, simply to engage in a hindsight reconstruction of the claimed invention, using the applicant's structure as a template and selecting elements from references to fill the gaps.

In re Gorman, 18 U.S.P.Q.2d at 1888 (quoting *Interconnect Planning Corp. v. Feil*, 227 U.S.P.Q. 543,551 (Fed. Cir. 1985)). Obvious to try is not the standard for 35 U.S.C. § 103. *In re Geiger*, 2 U.S.P.Q.2d 1276,1278 (Fed. Cir. 1987).

Applicants agree that once their novel disclosure has been read, it would thereafter be apparent to one skilled in the relevant art to make the claimed invention. What the Examiner has not explained, however, is why anyone of ordinary skill, without having had the benefit of Applicants' novel teaching before them, would have been motivated to make the novel combination. Certainly none of the references cited by the Examiner contain any teaching or suggestion to make Applicants' novel combination. The only conclusion that can be drawn is that the suggestion forming the basis for the Examiner's conclusion must have come from Applicants' own disclosure. That a rejection cannot be based on an applicant's own novel teaching is well settled. See above citations, for example.

Moreover, the Federal Circuit has repeatedly mandated that the invention *as a whole* be considered in obviousness determinations. *See, Cable Elect. Prod., Inc., v. Genmark, Inc.*, 226 U.S.P.Q. 881 (1985). The invention *as a whole* embraces the structure, its properties, and *the problem* it solves. *In re Rinehart*, 189 U.S.P.Q. 143 (C.C.P.A. 1976). Indeed, it is an error to focus "solely on the product created rather than the obviousness or non-obviousness of its creation." *In re Rinehart*, 189 U.S.P.Q. at 149; *In re Wright*, 6 U.S.P.Q.2d 1959 (Fed. Cir. 1988).

The problem confronted by Applicants was to design a helical scan transport for an automatic cartridge system, such as the 4400 ACS, with minimal cost to the user. While there are numerous ways to solve this problem (e.g., a total system replacement), most solutions require substantial cost to the user. In contrast, the present invention recognizes the advantage of applying helical scan technology to the data storage industry and teaches an arrangement in which existing systems can be updated at relatively minimal cost to the user. In particular, the present invention teaches a helical scan form factor that is compatible with existing systems that utilize the industry preferred 3480-style cartridges. Accordingly, the present invention achieves a data capacity increase of one hundred fold at a fraction of the

cost to replace or substantially modify the existing systems. Thus, Applicants submit that it is improper for the Examiner to focus on the resulting arrangement of the present invention without due consideration of the problem intended to be solved.

For at least these reasons, Applicants submit that independent claims 1, 5, and 9 and are patentable over the art of record. Reconsideration and withdrawal of the rejections is respectfully requested.

Claims 2-4, 6-8, and 10-12 dependent from and add additional features to independent claims 1, 5, and 9. Thus, these dependent claims are patentable for at least the reasons stated above. Accordingly, it is respectfully requested that the Examiner reconsider and withdraw these outstanding rejections.

Conclusion

Claims 1-12 are presented to the Examiner for reconsideration. Applicants believe these claims to be allowable based on the Amendment and Remarks set forth above, and favorable consideration is respectfully solicited.

All of the stated grounds of objection and rejection set forth by the Examiner in the Office Action have been either properly accommodated or addressed. Applicants therefore respectfully request that the Examiner reconsider and withdraw all presently outstanding objections and rejections.

The Examiner is courteously invited to telephone the undersigned representative if it is felt that an interview may be useful for any reason.

Respectfully submitted,

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1411-021.R1F